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the satellites, considers this point only). I believe it is the only point the eye can appreciate.* In considering the separating powers of telescopes, the size of the diffraction image is of course an all-important point; but it can scarcely affect the space-penetrating power.

1878, *August* 29.

Note upon the Proper Motion of 5 *Serpentis.*

By Professor T. H. Safford.

The right ascension of this star as given in Bessel's Bradley is about $20'' = 1^{s}\cdot33$ too large. By a new reduction of Bradley's three observations, I find for 1755·0, but without proper motion, using Newcomb's standard right ascensions,

			Mean R.A. h	m	s
1751	Jan. 7	Old Style	15	6	49·56
	May 26	,,			49·46
	June 3	,,			49·94
Mean (1751·3)			15	6	49·65
The *Fundamenta* gives			15	6	50·90

D'Agelet's one observation as reduced by Dr. Gould,

	h	m	s
1800·0 (1784·4)	15	9	5·7,

needs a correction of $+0^{s}\cdot74$. The time-stars for this date, June 5, 1784, are *Capella* and *Rigel*, and passed but a few minutes after the Sun. Nineteen small stars observed in the evening give corrections, when compared with their places from Bradley, brought up with Mädler's proper motion, of which one only is negative, and the mean of all is $+0^{s}\cdot737 \pm 0^{s}\cdot063$, showing that (probably) the instrument was exposed to the Sun's heat at noon and changed its position during the afternoon.

The correction is confirmed by five other stars, whose right ascensions were found in Bailey's Lalande.

With these corrections, and not without, the right ascensions can be made to agree well with a formula including position for

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* In the sense of distinguishing between the intensities of the impressions produced on the optic nerves by two diffraction images, unequal in size but both very small, and equal as regards quantity of light.

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1875 and proper motion. As reduced to the equinox and equator of 1875, they are as follows :—

		R.A.				C−O
		h	m	s		s
Bradley	1751·3	15	12	52·95	3 obs.	−0·02
D'Agelet	1784·4			53·62	1 ,,	+0·14
Lalande	1797·9			54·14	2 ,,	−0·05
Argelander	1830·			54·90	12 ,,	+0·10
Robinson	1831·67			54·92	4 ,,	+0·02
Challis	1836·4			55·07	3 ,,	−0·01
Airy	1845·			55·38	3 ,,	−0·11
Wagner	1849·4			55·39	4 ,,	−0·01
Radcliffe 2	1858·2			55·55	5 ,,	+0·05
Yarnall	1861·4			55·63	2 ,,	−0·02
Harvard College	1865·			55·73	8 ,,	+0·04
The formula compared is		15	12	56·022 + 0$^{\text{s}}$·0250 (t − 1875).		

I have here omitted the authorities Piazzi, Struve, Taylor, Henderson, and Rümker, which I know only at second hand; they would not alter the result by any large amount. The proper motion as usually given is much less. Argelander has +0$^{\text{s}}$·0084, Main +0$^{\text{s}}$·012, and Mädler +0$^{\text{s}}$·0166; the first two would become nearly correct if the error in Bradley were allowed for. Possibly the error +0$^{\text{s}}$·0166 in Argelander's P.M. would account for a portion of the discrepancy in his R.A. I do not know when the observations were made.

There is no trouble with the declination; the annual P.M. is nearly −0″·534 according to Mädler.

Williams College,
Williamstown, Mass., U.S.A.,
1878, *June* 13.

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